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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,943	10/06/2003	Pierpaolo De Laurentiis	02AG03853405	3592
27975	7590	06/21/2004	EXAMINER	
ALLEN, DYER, DOPPELT, MILBRATH & GILCHRIST P.A. 1401 CITRUS CENTER 255 SOUTH ORANGE AVENUE P.O. BOX 3791 ORLANDO, FL 32802-3791			TON, MY TRANG	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/679,943

Applicant(s)

DE LAURENTIIS ET AL.

Examiner

My-Trang N. Ton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-37 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 9-12, 19, 20 and 28-32 is/are rejected.
- 7) ☒ Claim(s) 13-18, 21-27 and 33-37 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites the limitation "the digital signal amplified" in line 11, "the delayed digital signal amplified" in line 13. There is insufficient antecedent basis for this limitation in the claim. Moreover, the limitation "an input circuit ... for providing a delayed digital signal" is misdescriptive of the present invention since such limitation is not seen as recited therein. In order to avoid any confusion, Applicant is required to particularly point out how this limitation reads on the circuit arrangement of the drawings.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9-10, 12, 19-20, 28-32 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu et al (U.S Patent No. 6,590,432).

Wu et al disclose in Fig. 4 a differential output buffer including:

varying a gain of the line driver (Fig. 4) between an upper value to coincide with switching of the digital signal (VP, VN) and a lower value in absence of the digital signal switching (see Figs. 7A-7E), the varying comprising:

amplifying (80) the digital signal (VP,VN) with a first gain for generating an amplified digital signal (output of 80),

delaying the digital signal (VP,VN) with a predetermined delay (180 degrees) for generating a delayed digital signal (VPP, VNP),

amplifying (70) the delayed digital signal (VPP,VNP) with a second gain for generating a delayed and amplified digital signal (output of 70), and

outputting over the output line an output signal (DOP, DON) corresponding to a difference between the amplified digital signal (the output of 80) and the delayed and amplified digital signal (the output of 70) as recited in claim 9.

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Regarding claim 10: the predetermined delay is equal to duration of a bit pulse of the digital signal (VP and VNP are 180 degrees equivalent to 1 bit pulse duration).

Regarding claim 12, the line driver comprises an input circuit (80) having a first input signal path for receiving the digital signal (VP) and a second input signal path for receiving an inverted digital signal (VN).

Claim 19 is similarly rejected as claim 9: an input circuit (80), digital signal (VP, VN), a delayed digital signal (VPP, VNP), digital signal amplifier (output of 80) an output circuit (70), a delayed digital signal amplified (output of 70) and an output signal (DOP, DON).

Claim 20 is similarly rejected as claim 12: the input circuit (80) comprises a first input signal path for the digital signal (VP) and a second input signal path for an inverted digital signal (VN).

Claim 28 is similarly rejected as claims 9 and 19: a driver (Fig. 4) comprising:
a first low voltage differential signal cell (80) being driven by the digital signal (VP) and by an inverted digital signal (VN), and

a second low voltage differential signal cell (70) being driven by a delayed digital signal (VPP) and by a delayed inverted digital signal (VNP),

the first and second LVDS cells (70, 80) being connected together so that output nodes thereof are connected in common for providing an output signal (DOP, DON) over the output line by determining a difference between an amplified digital signal (output of 80) and a delayed and amplified digital signal (output of 70).

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Regarding claim 29: the amplified digital signal (output of 80) has been amplified with a first gain, and wherein the delayed and amplified digital signal (output of 70) has been amplified with a second gain.

Regarding claim 30: the output nodes are connected together so that the output signal comprises a differential pair of output signal (DOP, DON).

Regarding claim 31: the driver comprises an input circuit for receiving the digital signal (VP, VN), and for providing the delayed digital signal.

Claim 32 is similarly rejected as claims 12 and 20: the input circuit (80) comprises a first input signal path for the digital signal (VP) and a second input signal path for an inverted digital signal (VN).

The limitation recited in claim 34 is inherently seen in the differential output buffer of Wu et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu as applied to claim 9 above.

As stated above, every element of the claimed invention recited in above claims can be seen in the circuit of Wu. However, this reference does not show the "the

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predetermined delay is less than duration of a bit pulse of the digital signal” as recited in claim 11.

Although Wu does not expressly state that the predetermined delay is less than duration of a bit pulse of the digital signal, this difference is not of patentable merit because clearly the circuit will operate in the same manner. Since the limitation “ the predetermined delay is less than duration of a bit pulse of the digital signal” is seen to define an intended use, clearly, the circuit of Wu is capable of providing the predetermined delay is less than duration of a bit pulse of the digital signal depending on the particular environment in which the circuit is employed and the desired output. It would have been obvious to one ordinary skill in the art as routine design expedients know that different type of bit pulse duration can be selected in order to produce correspondingly different output values.

Allowable Subject Matter

Claims 13-18, 21-27, 33, 35-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Trang N. Ton whose telephone number is 571-272-1754. The examiner can normally be reached on 7:00 a.m - 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 15, 2004



**MY-TRANG NUTON
PRIMARY EXAMINER**